

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (currently amended) A system for modulating an RF carrier comprising:

a lowpass filter with input connected to the RF carrier, said lowpass filter producing a first phase shifted carrier output;

5 a highpass filter with input connected to the RF carrier, said highpass filter producing a second phase shifted carrier output;

a data port for receiving data bit information;

10 a notch filter centered at the frequency of the RF carrier, wherein said notch filter feeds said data bit information exclusive of said RF carrier to said data port; and

a switch connected to an output of said lowpass filter and connected to an output of said highpass filter, said switch configured to select and output either said first phase shifted carrier output from said lowpass filter or said second phase shifted carrier output from said highpass filter depending on a switching state, said switching state determined by said data bit information at said data port.

2. (original) The system of claim 1 wherein said lowpass filter phase shifts the RF carrier approximately -90 degrees to produce said first phase shifted carrier output.

3. (original) The system of claim 1 wherein said highpass filter phase shifts the RF carrier approximately +90 degrees to produce said second phase

shifted carrier output.

4. (original) The system of claim 1 further comprising a power divider configured to split the RF carrier into two equal amplitude signals and feed the RF carrier into said lowpass filter and into said highpass filter.

5. (canceled)

6. (original) The system of claim 1 wherein said system is fabricated using MMIC.

7. (original) The system of claim 1 wherein said system is fabricated using ASIC.

8. (currently amended) A system for modulating an RF carrier comprising:

a lowpass filter with input connected to the RF carrier, said lowpass filter producing a phase shifted carrier output;

5 a highpass filter with input connected to the RF carrier, said highpass filter producing a phase shifted carrier output;

a first BPSK modulator with first input connected to said lowpass filter, said first BPSK modulator comprising:

10 a first lowpass filter with input connected to said first input, said first lowpass filter producing a first phase shifted carrier output;

a first highpass filter with input connected to said first input, said first highpass filter producing a second phase shifted carrier output;

a first notch filter centered about the RF carrier frequency and that receives a first data bit information;

15 a first data port for receiving [[a]] said first data bit information through said first notch filter; and

a first switch connected to an output of said first lowpass filter and connected to an output of said first highpass filter, and connected to said first notch filter via said first data port, said first switch configured to select and output either said first phase shifted carrier output or said second phase shifted carrier output depending on a first switching state, said first switching state determined by said first data bit information at said first data port;

a second BPSK modulator with second input connected to said highpass filter, said second BPSK modulator comprising

a second lowpass filter with input connected to said second input, said second lowpass filter producing a third phase shifted carrier output;

a second highpass filter with input connected to said second input, said second highpass filter producing a fourth phase shifted carrier output;

a second notch filter centered about the RF carrier frequency and that receives a second data bit information;

a second data port for receiving [[a]] said second data bit information through said second notch filter; and

a second switch connected to an output of said second lowpass filter and connected to an output of said second highpass filter, and connected to second notch filter via said second data port, said second switch configured to select and output either said third phase shifted carrier output or said fourth phase shifted carrier output depending on a second switching state, said second switching state determined by said second data bit information at said second data port; and

a power divider connected to an output of said first BPSK modulator and connected to an output of said second BPSK modulator, said power divider configured to produce a QPSK output vector sum of said output of said first BPSK modulator and said output of said second BPSK modulator.

9. (original) The system of claim 8 wherein said lowpass filter phase

shifts the RF carrier approximately -45 degrees to produce said phase shifted carrier output.

10. (original) The system of claim 8 wherein said highpass filter phase shifts the RF carrier approximately +45 degrees to produce said phase shifted carrier output.

11. (original) The system of claim 8 wherein said first lowpass filter and said second lowpass filter phase shift the RF carrier an additional approximately -90 degrees to produce said first phase shifted carrier output and said third phase shifted carrier output, respectively.

12. (original) The system of claim 8 wherein said first highpass filter and said second highpass filter phase shift the RF carrier an additional approximately +90 degrees to produce said second phase shifted carrier output and said fourth phase shifted carrier output, respectively.

13. (original) The system of claim 8 further comprising a power divider configured to split the RF carrier into two equal amplitude signals and feed the RF carrier into said lowpass filter and into said highpass filter.

14-15. (canceled)

16. (original) The system of claim 8 wherein said system is fabricated using MMIC.

17. (original) The system of claim 8 wherein said system is fabricated using ASIC.

18. (currently amended) A QAM modulation system for modulating an RF carrier comprising:

a first QPSK modulator comprising:

a lowpass filter with input connected to the RF carrier, said  
5 lowpass filter shifting the RF carrier approximately -45 degrees;

a highpass filter with input connected to the RF carrier, said  
highpass filter shifting the RF carrier approximately +45 degrees;

a first BPSK modulator with first input connected to said  
lowpass filter, said first BPSK modulator comprising a first lowpass filter with  
10 input connected to said first input, said first lowpass filter producing a first phase  
shifted carrier output shifted approximately -135 degrees; a first highpass filter  
with input connected to said first input, said first highpass filter producing a  
second phase shifted carrier output shifted approximately +45 degrees; a first  
data port for receiving a first data bit information; and a first switch connected to  
15 an output of said first lowpass filter and connected to an output of said first  
highpass filter, said first switch configured to select and output either said first  
phase shifted carrier output or said second phase shifted carrier output  
depending on a first switching state, said first switching state determined by  
said first data bit information at said first data port, said first data bit information  
20 being fed to said first data port through a first pair of identical notch filters  
centered about the frequency of the RF carrier;

a second BPSK modulator substantially identical in  
configuration to said first BPSK modulator, with a second input connected to  
said high pass filter and having a second switch configured to select and output  
25 either a third phase shifted carrier output shifted approximately -45 degrees or a  
fourth phase shifted carrier output shifted approximately +135 degrees  
depending on a second switching state, said second switching state determined  
by said a second data bit information at a second data port, said second data bit  
information being fed to said second data port through a second pair of identical  
30 notch filters centered about the frequency of the RF carrier;

a second QPSK modulator; ~~substantially~~ identical in configuration to said first QPSK modulator, with input connected to the RF carrier and having a third switch configured to produce a fifth phase shifted carrier output shifted approximately -135 degrees or a sixth phase shifted carrier output shifted approximately +45 degrees depending on a third switching state, said third switching state determined by a third data bit information at a third data port, said third data bit information being fed to said third data port through a third pair of identical notch filters centered about the frequency of the RF carrier; and having a fourth switch configured to produce a seventh phase shifted carrier output shifted approximately -45 degrees or an eighth phase shifted carrier output shifted approximately +135 degrees depending on a fourth switching state, said fourth switching state determined by a fourth data bit information at a fourth data port, said fourth data bit information being fed to said fourth data port through a fourth pair of identical notch filters, centered about the frequency of the RF carrier;

an attenuator with input connected to an output of said second QPSK modulator; and

a vector summer connected to an output of said first QPSK modulator and connected to an output of said attenuator, said vector summer configured to produce a QAM output vector sum of said output of said first QPSK modulator and said output of said attenuator.

19. (currently amended) A method for modulating an RF carrier comprising steps of:

passing the RF carrier through a lowpass filter, said lowpass filter producing a first phase shifted carrier output;

5 passing the RF carrier through a highpass filter, said highpass filter producing a second phase shifted carrier output;

providing data bit information to a data port through identical notch filters centered about the frequency of the RF carrier; and

- employing a switch connected to an output of said lowpass filter
- 10 and connected to an output of said highpass filter to select and output either said first phase shifted carrier output from said lowpass filter or said second phase shifted carrier output from said highpass filter depending on a switching state, said switching state determined by said data bit information provided to said data port.